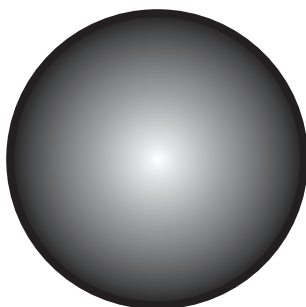
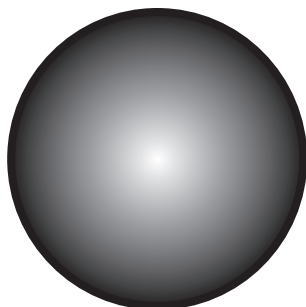


OWNER'S MANUAL

**KRYO K4.4 - K5.5
POWER AMPLIFIERS**




acoustics

OWNER'S MANUAL

KRYO K4.4 - K5.5 POWER AMPLIFIERS



Technical and design specifications are
subject to change without notice



CAUTION



TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE TOP OR BOTTOM COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. DISCONNECT POWER CORD BEFORE REMOVING REAR PANEL COVER TO ACCESS GAIN SWITCH.

Shock Hazard - Do Not Enter
Choc Hasard - N*entrent
Schocke Hazard - Test Nicht
Betrete
Urto Hazard - Do Non Entrano



WARNING

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE!

Magnetic Field

CAUTION: Do not locate sensitive high-gain equipment such as preamplifiers or tape decks directly above or below this unit. Because this amplifier has a high power density, it has a strong magnetic field which can induce hum into unshielded devices that are located nearby. This field is strongest just above and below the unit. If an equipment rack is used, we recommend locating the amplifier(s) at the bottom of the rack and the preamplifier or other sensitive equipment at the top.

The lightning bolt triangle is used alert the user to the risk of electric shock

The exclamation point triangle is used to alert the user to important operating and/or maintenance instructions.[]

Printed on recycled paper.

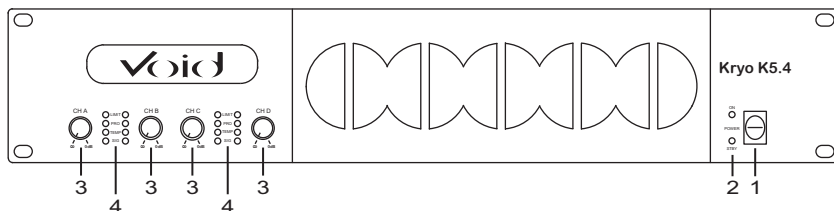
Features

- ▲ Rugged, touring grade chassis. E.I.A. Standard 19" (48.3cm) rack-mountable.
- ▲ Ultra compact and lightweight 2u design.
- ▲ Super high frequency switch mode power supply.
- ▲ Optional add on Modules extend operational capability.
- ▲ Switchable (ICL) Intelligent Clip limiters prevent harmful signals from damaging loudspeakers.
- ▲ Input link switches for linking channels.
- ▲ Dual and Bridge modes for optimal load matching.
- ▲ Switchable 30 or 50Hz Hi Pass filters on every channel.
- ▲ Balanced XLR inputs with Speakon outputs.
- ▲ Complete protection against shorted outputs, mismatched loads, overheating and DC input/output.
- ▲ Three year warranty and guarantee.

Precautions

Although your amplifier is protected from external faults, the following safety precautions are recommended:

1. **Do not change the position of the bridge mode switch unless the amplifier is switched off.**
2. There are important differences between Dual, Link and Bridge modes. Please refer to page 9 for a detailed description of the different modes and there uses.
3. Switch off the amplifier or turn down the inputs before connecting to the in/out XLR's.
4. Do not short the ground lead of an output cable to the input signal ground. This will form a ground loop and may cause oscillations.
5. Do not operate the amplifier from AC mains in excess of 10% variation above or below the selected line voltage, and only at the specified line frequency.



Front Panel

1. Power Switch

Used to turn the amplifier on or off.

2. Power LED's

The top blue LED lights when the amplifier is switched on.

The lower amber LED lights when the amplifier is in stand-by mode and is remotely activated via Ethernet.

3. Level Controls

Used to control CH A, B, C and D's output level.

4. Status LED's

SIG

When illuminated the signal LED's indicate an audio signal is present at the channel's input.

TEMP

Indicates when temperature protection is active.

PRO

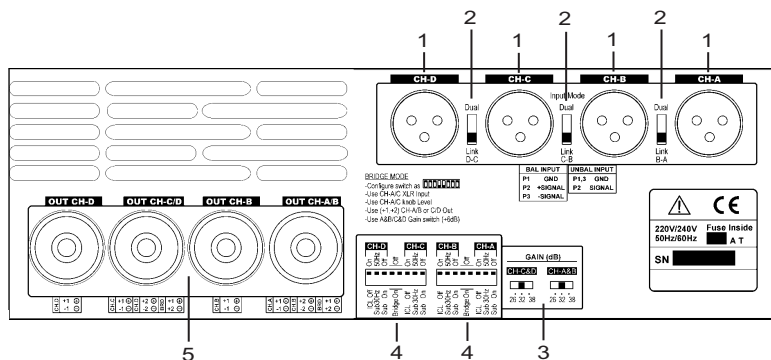
The protect LED's light up when the amplifier goes into protect mode.

See page 11.

LIMIT

The Limit LED's indicate when the ICL limiter is active. The limiter circuit examines the audio output signal to prevent the amplifier from clipping.

See page 11.



Rear Panel

1. Input XLR's

The input impedance of the balanced XLR's is 20K Ω . Pin 2 is signal +

2. Link / Dual Switch

Used to link one input to an adjacent input. In dual mode each channel uses its own independent input.

3. Gain Selection Switch

The three position switches select either 26, 32 or 38dB of gain per channel. The default setting is 32dB.

4. Configuration Switch

Each channels dip switches are used to set the Hi Pass filter, ICL clip limiter and bridge mode. See page 7 for a detailed explanation.

5. Output Speakers

In dual or link modes connect to pins +1 and -1 on each individual output. Out A/B is also wired so that channel A outputs on pins +1, -1 and channel B outputs on pins +2, -2. The same applies to out C/D, where channel C outputs on pins +1, -1 and channel D outputs on pins +2, -2. In bridge mode use out A/B for one of the bridge outputs and connect to pins +1, +2 and use out C/D for the other bridge output and connect to pins +1, +2.

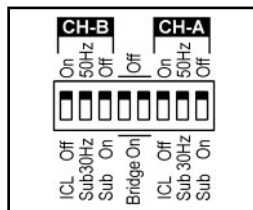
Installation and Operation

Configuration Switches

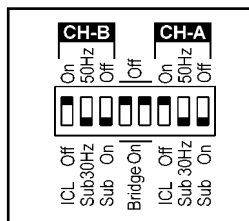
The amplifier has a set of mini dip switches on the rear panel. These switches allow the activation of the Hi Pass filter and its frequency, the activation of the ICL clip limiter and bridge mode. Any of these configurations can be activated in any way and independently on each channel if required.

The basic configurations are as follows:

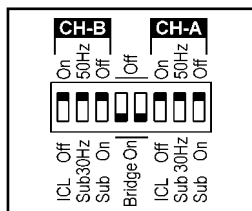
Standard Configuration: the amplifier works without Hi Pass subsonic filter, Clip Limiter ICL enabled and no Bridge mode.



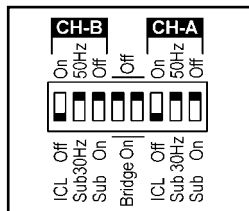
Sub-sonic Filter Enabled: the amplifier works with Hi Pass subsonic filter (30Hz in this case), Clip Limiter ICL enabled and no Bridge mode.



Bridge Mode: the amplifier works without Hi Pass subsonic filter, Clip Limiter ICL enabled and Bridge mode.



ICL Clip Limiter Disabled: the amplifier works without Hi Pass subsonic filter, Clip Limiter ICL disabled and no Bridge mode.

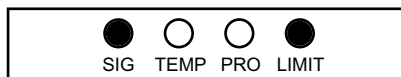


LED Status

In the event of incorrect connection or a malfunction, the amplifier will activate one or more of its LED's to warn about the problem.



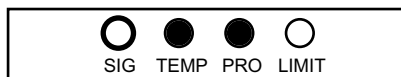
Correct function: SIG lights to indicate a signal's presence.



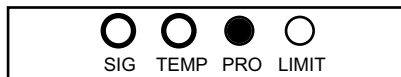
ICL: The Intelligent Clip Limiter is operating (see page 11).



No Signal: No Input Signal is reaching the amplifier.



Overheating: The amplifier has reached the maximum operational temperature. Most common cause is: the normal air flow is blocked, accumulated dirt, dust or object leaning against the grill. Check and clean periodically.



PRO: Several causes can trigger this LED, refer to page 11 for more details.

System Connections

Dual Mode

In dual mode connect individual sources to inputs A, B, C and D and set all the link / dual switches to dual. Channel A's input will output from out A, channel B's input will output from out B and so on. Each individual output uses pins +1,-1 or you can connect to out A/B with 4 core cable, where pins +1,-1 are for channel A and pins +2,-2 are for channel B. The same applies to out C/D, where pins +1,-1 are for channel C and pins +2,-2 are for channel D. This type of arrangement could be used for 2 way active speakers, where channel A would be bass Left and channel C would be bass Right. Channel B would be HF Left and channel D would be HF Right. If 4 core speaker cable was used then the whole system could be connected from out A/B and out C/D. Note, this arrangement would only work if the speakers were wired pins +1,-1 to the woofer and pins +2, -2 to the HF unit.

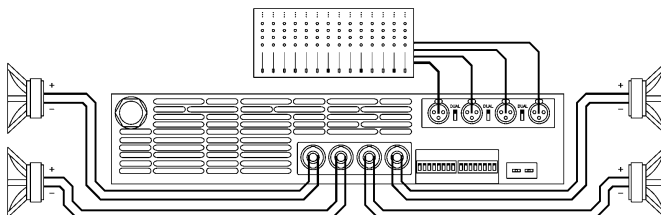
Link Mode

If the link / dual switches are set to link, then adjacent channels will receive the same input. This mode is useful if you only have 1 or 2 input sources but want to use all 4 amplifier channels. Typical arrangements could be powering 4 speakers from a stereo output, in which case you would connect the left output to input A and the right output to input C. Set the B-A link switch to link and the D-C link switch to link. The C-B link switch should be set to dual. If all the link switches were set to link, then an input to CH A would output on all 4 outputs.

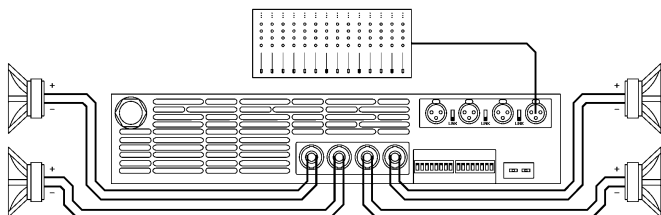
Bridge Mode

Bridge mode can be set independently for channels A-B and C-D. This allows for different configurations. If a 2 channel amplifier is required then set both channels dip switches to operate in bridge mode and set all the link / dual switches to dual. Use inputs A and C and out A/B and out C/D for the outputs. Pins +1 and +2 should be used on these outputs. Note that the minimum load per bridged output is 4 ohms. If a 3 channel configuration is required, use channels A and B for left and right and bridge channels C and D. For this configuration inputs A, B and C would be used, input C would be the input for the bridge channel. Set channels C and D's dip switches to bridge and use out C/D for the bridge output. Pins +1 and +2 should be used on the bridged output. The minimum impedance that can be connected to the bridge output is 4 ohms and the minimum impedance that can be connected to output A or B is 2 ohms.

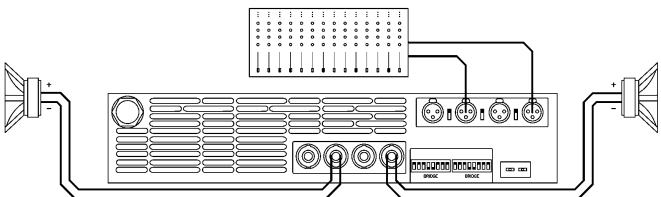
Dual Channel Mode



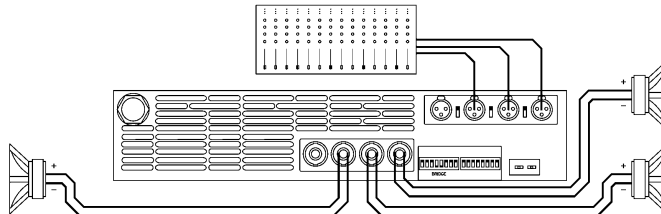
Linked Inputs



Bridge Mode



Bridge + Dual Mode



Protection System

Each Kryo amplifier features a complete protection system that monitors the main amplifier parameters (load status, signal input, temperature, current etc)

The system controls the amount of power that the amplifier delivers under three basic circumstances.

1. The power on sequence, where the output is inhibited until the amplifiers circuits are ready to operate. This routine is repeated at every restart, not just when the power switch is activated.
2. When internal temperatures rise to the near thermal shutdown point due to unfavourable operating conditions. Here the system takes control, restricting current to maintain operational continuity at the precise power level at which the amplifier is capable of withstanding at the particular moment.
3. Excessive mains current consumption. This event only occurs either under laboratory conditions (long term sinusoidal signal testing with dummy loads) or, for example, in conditions of prolonged acoustic feedback. Here the protection system takes control to avoid any damage to the speakers and to prevent the mains breaker from tripping or the fuses blowing.

ICL Intelligent Clip Limiter

The Kryo series of amplifiers use an intelligent anti clip system that differs from conventional clip reduction systems. The system dynamically tracks the power rail values to provide instant current/voltage limiting, this eliminates any limiting of the signal dynamics. More like a valve amplifier, the ICL system maintains sonic transparency even when the amplifier has exceeded the threshold of clipping, providing very high dynamics at negligible distortion levels.

The default setting for the limiters is on, and it is recommended that the anti clip limiters be left in the on position.

TECHNICAL SPECIFICATIONS Kryo models K4.4 - K5.5

FREQUENCY RESPONSE ref.100W@8Ω	20Hz - 20kHz +/-0.25 dB
THD ref. 4Ω, 20Hz - 20KHz	<0.05%
S/N 20Hz-20kHz, ref full output	115 dB
INTERMODULATION DISTORTION, SMPTE	<0.05%
PHASE RESPONSE @ 1 watt 20Hz - 20KHz	+/- 15 deg
CROSSTALK 20Hz - 20KHz	>75dB
VOLTAGE GAIN	26/32/38 dB
SLEW RATE	60V/us
DAMPING FACTOR 20Hz - 500Hz @ 8Ω	>500
CONNECTORS	Input: balanced XLR Output: Speakon
COOLING	2 Variable speed fans
AMPLIFIER PROTECTION	Full short circuit, open circuit, thermal, ultrasonic, and RF protection, stable into reactive or mismatched loads
VOLTAGE RANGE	220 - 240V AC 50/60 Hz

		Kryo K4.4		Kryo K5.5	
Mode	Impedance	RMS Output Power per ch		RMS Output Power per ch	
		0.1%THD+N	12dB Crest Factor	0.1%THD+N	12dB Crest Factor
		1kHz	Pink Noise	1kHz	Pink Noise
All 4 Channels Driven	2	700	890	980	1170
	4	500	580	670	820
	8	300		430	
Bridge Mode	4	2 x 1400		2 x 1960	
	8	2 x 1000		2 x 1340	
Sensitivity @ 8Ω		2.6/1.3/0.6 V		3.0/1.5/0.8 V	
Maximum Current Draw @ 1/8 rated power		6 A		7.5 A	

Dimensions :

48.3 cm (19") wide, 8.9 cm (3.5") high and 31.0 cm (12.2") deep.

Weight:

Kryo K4.4 :

8.0 Kg (18.7 pounds) net.
10.5 Kg (23.1 pounds) shipping weight.

Kryo K5.5 :

8.0 Kg (18.7 pounds) net.
10.5 Kg (23.1 pounds) shipping weight.

Service

This unit has very sophisticated circuitry and should only be serviced by a fully trained technician.

To prevent electric shock, do not remove covers

No user serviceable parts inside

Refer servicing to a qualified technician

Worldwide Service

Service may be obtained from your local authorised service centre. To obtain service, simply present your sales receipt as proof of purchase along with the defective unit to an authorised service centre. They will handle the necessary paperwork and repair. Remember to transport your unit in the original factory packaging.

1. When sending a Kryo Series product to an authorised service centre for service, please write a detailed description of the fault and list any other equipment used in conjunction with the faulty product. Send the fault description with the faulty product, do not send it separately.
2. Ensure safe transportation of your unit to the authorised service centre. Ship it in the original factory packaging if possible.
3. Do not ship the unit in any kind of rack. Ignoring this warning may result in extensive damage to the unit and the equipment rack. Accessories are not needed. Do not send the instruction manual, cables or any other hardware.
4. Before returning your faulty product for repair, please remember to get a return authorisation number from the dealer whom you purchased your product from. Failure to do so could delay the repair of your product.

Warranty Registration

Please take time to fill out the warranty registration form at the back of this manual and return it to Void Acoustics.

Environmental



WEEE Mark

If you want to dispose of this product, do not mix with general household waste. There are separate collection systems for used electronic products in accordance with legislation under the WEEE Directive (Directive 2002/96/EC) and is effective only within the European Union.

This product is Rohs compliant.



LIMITED WARRANTY

THE WARRANTY

For a period of three (3) years from the date of delivery to the original purchaser (as shown on the original invoice or sales receipt), Void Acoustics (hereinafter "Void") warrants to the ORIGINAL OWNER of each new Kryo Series product (provided it was purchased at an Authorised Void Dealer) that it is free of defects in materials and workmanship and that each product will meet or exceed all factory published specifications for each respective model. Void agrees to repair or replace (at its discretion) all defective parts at no charge for labour or materials; subject to following provisions:

WARRANTY VIOLATIONS

Void shall take no responsibility for repair or replacement as specified under this warranty, if the damaged product has been subject to misuse, accident, neglect or failure to comply with normal maintenance procedures; or if the serial number has been defaced, altered or removed. Nor will Void accept responsibility for, or resulting from, improper alterations or unauthorised parts or repairs. This warranty does not cover any damage to speakers or any other consequential damage resulting from breach of any written or implied warranty.

VOID WARRANTY PROVISIONS

Void will remedy any defect, regardless of the reason for failure (except as excluded) by repair, or replacement. Void will remedy the defect and ship the product within a reasonable time after receipt of the defective product at an Void Authorised Service Centre.

TO OBTAIN WARRANTY SERVICE

In the event that a Void product requires service, the Owner must contact Void or an Authorised Void Service Centre to receive an R.A.N. (Return Authorisation Number) and instructions on how to return the product to the Void Authorised Service Centre, or to the factory. Void (or its Authorised Service Centre) will initiate corrective repairs upon receipt of the returned product. Please save the original carton and all the packing materials in case shipping is required. All products being returned to the factory or service centre for repairs must be shipped prepaid.

If the repairs made by Void or the Void Authorised Service Centre are not satisfactory, the Owner is instructed to give written notice to Void. If the defect or malfunction remains after a reasonable amount of attempts by Void to remedy the defect or malfunction, the Owner shall then have the option to elect either a refund or replacement of said Void product free of charge. The refund shall be an amount equal to but not greater than the actual purchase price, not including any taxes, interest, insurance, closing costs and other finance charges (minus reasonable depreciation on the product). If a refund is necessary, the Owner must make the defective or malfunctioning product available to Void free and clear of all liens or other restrictions.

MODIFICATIONS OF EQUIPMENT

Void reserves the right to modify or change equipment (in whole or part) at any time prior to delivery thereof, in order to include therein electrical or mechanical improvements deemed appropriate by Void, but without incurring any liability to modify or change any equipment previously delivered, or to supply new equipment in accordance with any earlier specifications.

DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

YOU, THE OWNER, ARE NOT ENTITLED TO RECOVER FROM VOID ANY INCIDENTAL DAMAGES RESULTING FROM ANY DEFECT IN THE VOID PRODUCT. THIS INCLUDES ANY DAMAGE TO ANOTHER PRODUCT OR PRODUCTS RESULTING FROM SUCH A DEFECT.

WARRANTY ALTERATIONS

No person has the authority to enlarge, amend, or modify this Warranty. This Warranty is not extended by the length of time which the Owner is deprived of the use of product. Repairs and replacement parts provided pursuant to the Warranty shall carry only the non-expired portion of the Warranty.

**THIS STATEMENT OF WARRANTY SUPERSEDES ALL OTHERS CONTAINED IN THIS
MANUAL**

Void Acoustics Warranty



This Void Acoustics product is guaranteed against defects due to faulty materials or workmanship for a period of 12 months from the date of original purchase, subject to the following restrictions.

1. This warranty is only valid in the country of purchase.
2. That the product has not been abused or operated in conjunction with unsuitable or faulty apparatus.
3. That the product has not been modified, disassembled or tampered with by any person other than Void Acoustics technical staff.
4. That the product has not suffered damage in transit.

Do not send goods to Void Acoustics without first obtaining a return authorisation number.

Carriage costs to Void Acoustics will be returned to the customer if warranty work proves necessary. Packing, insurance and freight on the return journey will be paid by Void Acoustics or its authorised dealers.

This warranty in no way affects your statutory rights.

Void Acoustics

Unit 10B, Dawkins Road Ind Est, Poole, Dorset, BH15 4JD
Tel: +44 (0)870 1651 332 Fax: +44 (0)870 1651 352

Owner's Warranty Copy



Date of purchase

Model

Serial number

Suppliers name and address

Post code :

Tel :

What to do if your Void product needs repair

Contact the dealer from whom you purchased the product and get a return authorisation number.

Return the product (preferably in its original box) to :

Void Acoustics, Unit 10B, Dawkins Road Ind Est, Poole,
Dorset, BH15 4JD, UK.

Warranty Registration

Thank you for purchasing this Void product. Please complete this warranty registration card and cut off this part and send it to the address overleaf.

Date of purchase

Model

Serial number

Suppliers name and address

Post code :	Tel :
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Your name and address

Post code :	Tel :
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Void Acoustics

Unit 10B

Dawkins Road Ind Est

Poole

Dorset

BH15 4JD

UK